PATENT SPECIFICATION 741,136

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COMPLETE SPECIFICATION.

Improvements in or relating to Suction Cleaners and Floor Scrubbers or Polishers.

I, GORDON THOMAS FILLERY, a British Subject, of 215 Anderson Street, Johannesburg, South Africa, (formerly of 66 Sivewright Avenue, Johannesburg, South Africa) do hereby declare the invention for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

A known form of combined suction cleaner and floor scrubber comprises one or more rotary brushes vertically adjustable to bring them to an on-the-floor position when the machine is to be used for floor scrubbing and to an off-the-floor position when the machine is to be used for cleaning the floor solely by suction—hereinafter referred to as apparatus of the kind set forth. Conventionally, in a machine of this kind the suction fan is continuously driven so that the air drawn through the suction nozzle may carry moisture into the machine when scrubbing.

This invention has for its object to overcome or minimise this undesirable feature by means which assists in the floor scrubbing operation performed by the rotary scrubbing brushes and which furthermore may be used detached from the apparatus as a conventional mop e.g. floor mop.

The invention provides for use with the suction nozzle when required, a device comprising a plate-like member, fastening means carried by said member to secure the member to the suction nozzle of the apparatus so that said member substantially closes the nozzle, a floor cleaning pad on the underface of said member and means on the upperface of the member to receive a handle whereby the device, when detached from the apparatus, may be used as a mop.

In order that the nature of the invention may be better understood a preferred embodiment will now be described, by way of example only, with reference to the accompanying drawings whereof: :

Figure 1 is an inverted plan view of a cleaning device in accordance with the invention;

Figure 2 is a section on the line II—II of Figure 1; and

Figure 3 is a section on the line III—III of Figure 2.

Referring to the drawings: the device comprises a cleaning pad 12 of sponge rubber which is made by blowing rubber material on to a plate-like element 9—which is moulded from hard rubber.

The element 9 is dish-shaped and is formed with an outer flange 11 and a pair of upstanding lugs 10, the latter being at a pair of opposite sides of the element 9, which is of rectangular outline (Figure 1).

Element 9 has a plurality of integral bosses 13 in each of which is embedded a hook catch 14 having an outwardly directed finger 15, the catches 14 being on a pair of opposite sides of the element 9.

A hole 19 which extends centrally through the backing element 9, has a pair of side slots 20. For strength purposes the hole 19 is in a boss formed during moulding of the backing element 9.

The cleaning device is applied to the suction nozzle as illustrated in Figure 3. In the particular arrangement being described the suction nozzle comprises a sheet metal member 16 having a rectangular opening defined by edge 17 through which the air is entrained and from the lower face of which a brush-agitator, of any known or convenient construction, projects to a small extent, as is well known with suction cleaners. The lugs 10 engage a pair of opposite sides of the marginal edge 17 preventing movement of the device lengthwise of

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the nozzle and the hook elements 14 clip over the long sides of the marginal edge 17 to fasten the cleaning device to the suction cleaner. The projecting portion of the brush-agitator is accommodated in the dished portion of the backing element 9.

When the cleaning device is detached from the member 16 a handle, having an attachment clip or the like of convenient construction, may be secured to the device The attachment clip comprises a member with a pair of lugs to pass through the slots 20 of hole 19, rotating of the lugs resulting in their engaging the surfaces 21. The lugs may be held in engagement with the surfaces 21 either by spring means or by a cam action or by adjustment of a screw-threaded device but in any event the cleaning device is secured to the handle.

The handle-attachment means illustrated is preferred as it does not interfere with the agitator when the cleaning device is attached to the suction nozzle 16.

When the cleaning device is attached to the handle there may be provided in combination therewith any known or convenient means for compressing the facing 12 so as more effectively to expel water therefrom. Thus the backing element 9 may be hinged on a central transverse plane so that the two portions of the cleaning device so formed may be hinged together to bring the associated portions of the facing 12 together and thereby expel water.

What I claim is:

1. A device for use with an apparatus of the kind set forth comprising a plate-like member, fastening means carried by said member to secure the member to the suction nozzle of the apparatus so that said member substantially closes the nozzle, a floor cleaning pad on the underface of said member and means on the upper face of the member to receive a handle whereby the device, when detached from the apparatus, may be used as a mop.

2. A device as claimed in Claim 1 wherein the plate is a moulding made from a relatively hard rubber material and the cleaning pad is a facing thereon of sponge rubber bonded to the moulding.

3. A device as claimed in Claim 2 wherein the moulded plate has a central hole or slot which passes therethrough to receive a handle attachment device when detached from the nozzle members, a member of which attachment device engages the surface of the plate adjacent the hole or slot to clamp the plate between the members.

4. A device as claimed in Claim 2 or 3 wherein the moulded plate is of rectangular outline and has integral lugs to engage a pair of opposite sides of the suction nozzle thereby to prevent movement of the device relatively to the nozzle in one direction and the moulded plate carries hook elements to engage the other pair of opposite sides and secure the device to the suction nozzle.

5. A device as claimed in Claim 4 wherein metallic hook elements are secured to the moulded plate during moulding.

6. A device for attachment to the suction nozzle of apparatus of the kind set forth substantially as hereinbefore described and as illustrated in the accompanying drawing.

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PROVISIONAL SPECIFICATION.

Improvements in or relating to Suction Cleaners and Floor Scrubbers or Polishers.

I, GORDON THOMAS FILLERY, a British Subject, of 66, Sivewright Avenue, Johannesburg, Union of South Africa, do hereby declare this invention to be described in the following statement:—

This invention concerns cleaning devices which may, as required, be used in association with a combined suction cleaner and floor scrubber of any convenient or known construction. Such an apparatus commonly comprises one or more rotary brushes carried by the body of the machine so that they are vertically adjustable to bring them to an on-the-floor position, when the machine is to be used for floor scrubbing, and to an off-the-floor position when the machine is to be used as a suction cleaner. The brushes are suitably driven by an electric motor which may also drive a fan for performing the suction cleaning operation. When the brushes are in their on-the-floor position the suction nozzle is raised off the floor and vice versa. The present invention relates to a cleaning device which is adapted to be used in combination with a machine of the type referred to in which the suction fan is driven during the scrubbing operation. With this arrangement air is drawn through the suction nozzle while scrubbing is pro-

ceeding with the possibility that moisture will pass into the machine.

The present invention has for its object to overcome or minimise this disadvantage and also to improve the scrubbing action of the machine.

According to the present invention the cleaning device comprises a cleaning pad, a backing element which carries the pad, and attachment head carried by the backing element by which the device may be detachably secured to a handle to serve as a floor mop and means carried by the backing element for detachably securing the device to the suction nozzle of a combined suction cleaner and floor scrubber whereby, on said attachment, the suction nozzle is substantially closed by said device.

A device in accordance with the present invention therefore substantially excludes the admission of air through the suction nozzle when the machine is being used as a scrubber. Prior to the attachment of the device to the machine, the cleaning pad may be impregnated with a suitable cleaner in liquid or paste form e.g. a liquid soap or detergent or soft soap or it may have such a cleaner applied to the exposed face of the pad. The device then serves additionally to apply the cleaner to the floor as the machine is moved across the floor, the cleaner being thus applied as a relatively thin film to the floor ready for scrubbing by the brushes.

The cleaning pad may be of fabric or fabric faced or it may be of a rubber-like material—which term includes natural rubber and synthetic resins—or it may be a pad of sponge or artificial sponge.

The backing element may be a plate which extends over substantially the entire back of the pad or alternatively it may be a frame comprising two or more straps to which the pad is attached and which carries the attachment head and the means for securing the device to the suction nozzle. The pad may be detachably carried by the backing element so that when worn it may be replaced.

It is preferred that the backing element be made of rubber formed with a central hole to receive and grip the mop handle. In such an arrangement the hole is elongated and the end of the mop handle which is to be attached thereto is provided with an elongated head whereby it may be readily entered into and withdrawn from the slot. When introduced the mop handle may be rotated to bring the head behind the backing element whereby the cleaning device is effectively attached to the mop handle. In a particular arrangement the handle is flat sided and two grooves are cut from one of said sides to the other, the arrangement being that the flat sides are introduced to the elongated slot and on rotation the grooves are positioned to receive the edges of the backing element which extend along the elongated slot.

It is preferred that the backing element be secured to the suction nozzle by spring clips and in a particular arrangement press studs are used for this purpose, the socket element of the press stud being carried by the backing element and the stud by the suction nozzle. Other forms of spring clip may be used instead of press studs and in another arrangement the backing element is so formed as to slide along channel elements in the suction nozzle. The cleaning device is then attached to, and removed from the suction nozzle with a sliding action.

The provision of an elongated slot and a headed handle for attachment of the backing element to the handle is preferred since there are then no protrusions on the rear surface of the backing element, the gripping action being enhanced with the use of a rubber-like material for the backing element. However, it will be appreciated that a threaded socket may be carried by the backing element to receive a correspondingly threaded end of the mop handle, the threaded socket lying within the suction nozzle when the cleaning device is attached thereto.

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Chartered Patent Agents.

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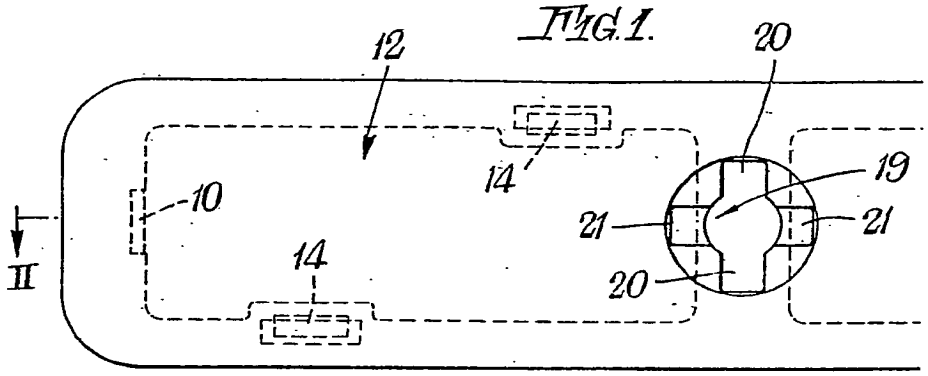
FIG. 1.



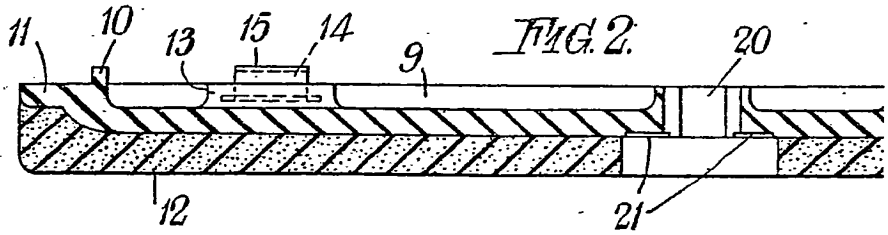


FIG. 2.

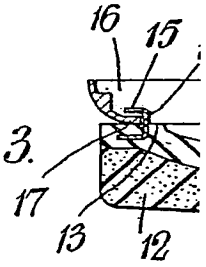


FIG. 3.

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1 SHEET

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FIG. 1.

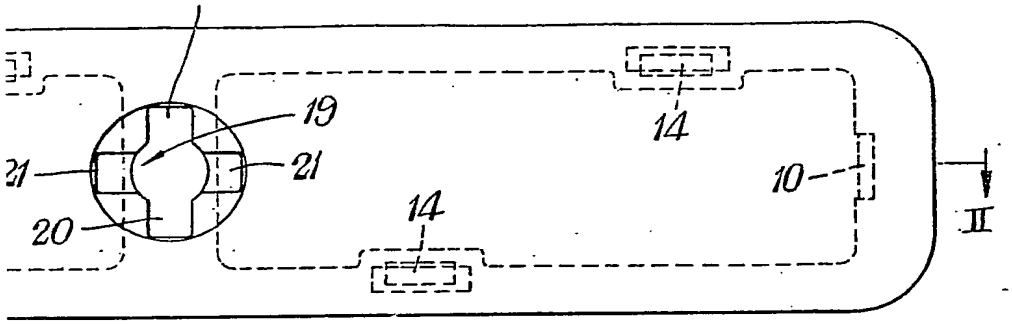

FIG. 2.

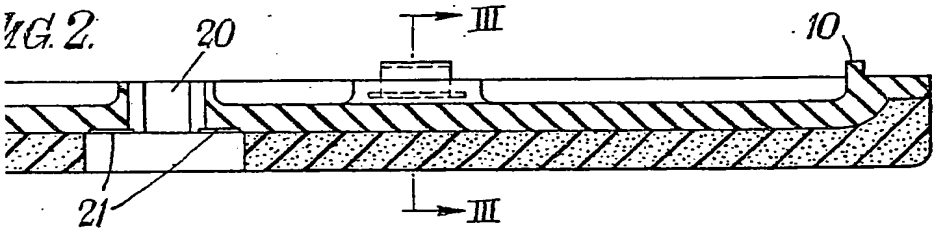

FIG. 3.

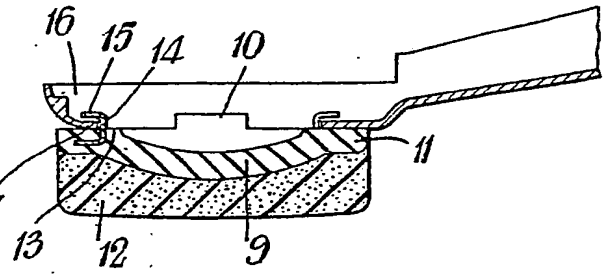

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Fig. 1.

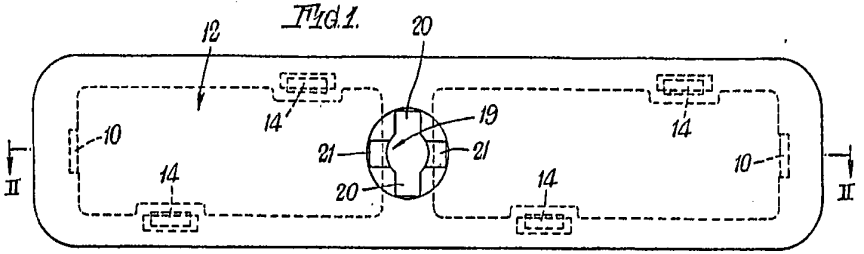

Fig. 2.

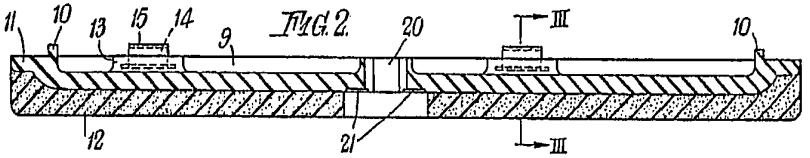

Fig. 3.